

**ENVIRONMENTAL MEMORANDUM**

**Red Chris Development Company Ltd.**  
200–580 Hornby Street, Vancouver, BC V6C 3B6

Date: December Jan 5, 2016

Distribution: Red Chris Monitoring Committee

From: Blaine Lindstrom, Chantel Quock and Jason Nole, Environmental Technicians;  
Jack Love, Environmental Superintendent

Re: Red Chris Monitoring Committee Environmental Report Dec 23, 2015 – Jan 5, 2016

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**Weather:**

Temperatures range from -16°C to -7°C. There's been very little to no snowfall and temperatures have been staying mostly in the lower range.

**General Activities:**

- Drilling, blasting, and mining in the pit.
- Extending the footprint of the Rock Storage Area (RSA).
- Replacing frozen pipes in the Tailings Impoundment Area (TIA).

**Spills and Incidents:**

- Dec 30, 2015: 4 L hydraulic oil spill in the old TIA road (figure 14).
- Jan 2, 2016: 500 L diesel spill in the main zone of the pit. PEP reportable. DGIR #: 152806 (figures 15 & 16)
- The spill in the trailer from last report on December 18<sup>th</sup> has been cleaned up (figure 17).

**Water Management:**

- After review of the data following the pit sump incident it was determined that impact to the environment was minimal and the daily sampling will be reduced to weekly for the time being. There will be a 5 samples in 30 days program set up during the spring melt to monitor any water from the sump that had frozen.
- Completed the 2015 groundwater monitoring program.
- Routine bi-weekly sampling. One site, W69, was completely frozen and no sample was taken.
- Collected most of the January monthly surface water samples.
- A road was built crossing Camp Creek at the headwaters near the pit to create access for a new radio repeater station. The current crossing is not environmentally friendly and will most likely cause problems in the future. There is a plan to have a proper crossing such as a small bailey bridge installed (figures 1 & 2).

**Waste Management:**

- The lagoon's blowers continue operate without interruption. However, the ice layer is growing and has sealed off the holes where the air from the blowers was escaping. It's possible the lines feeding the aerators have frozen and all the air is being blown out of the open end of the pipe, which is after the junctions to the aerators.

**Fuel Management:**

- Monthly fuel bay inspections for January have been completed. All 3 sites have failed again due to snow in the secondary containment.
- There are 5 large piles of wood to burn in the TIA. 2 piles are close to the forest and there is not enough snow to start a fire.

**Wildlife Management:**

- A cow and a calf moose continue to graze near the West and South sides of the bunk houses. They normally appear at the end of every other day to feed on the vegetation. They have become habituated and won't leave when people are nearby. Attempts to scare them away, with air horns and bear bangers, are being made but have been ineffective. They have been attracted to the salt on the walkway between the camp bunks and parking lot. They've been seen less and less now since about the 28<sup>th</sup> (figure 18).
- Dec 22 – A black fox was spotted on the old TIA road at 1 km.
- Dec 29 – A wolverine was seen behind the PAG dump during night shift. It was just passing through.
- Jan 1 – A fox was having a nap near the fuel bay in the TIA (figure 19).

**Photos:**

**Figure 1:** Dec 21 – The upstream side of the Camp Creek crossing.





**Figure 2:** Dec 21 – The downstream side of the Camp Creek crossing.



**Figure 3:** Jan 3 – Sample site W20. Lots of creeks have been freezing like the above photo.





**Figure 4:** Jan 3 – Site W30 30 to 40 inches on ice on streams, the lack of snow which provides thermal protection for flows has caused streams to freeze solid and over flow the banks



**Figure 5:** Dec 23 – Chantel Quock, an environmental technician, sampling water from the pit sump (W75).



**Figure 6:** Jan 2 – Water freezing, such as here at W8, makes it very difficult to take water samples.



**Figure 7:** Jan 2 – Water sample site W79 has been buried by construction.



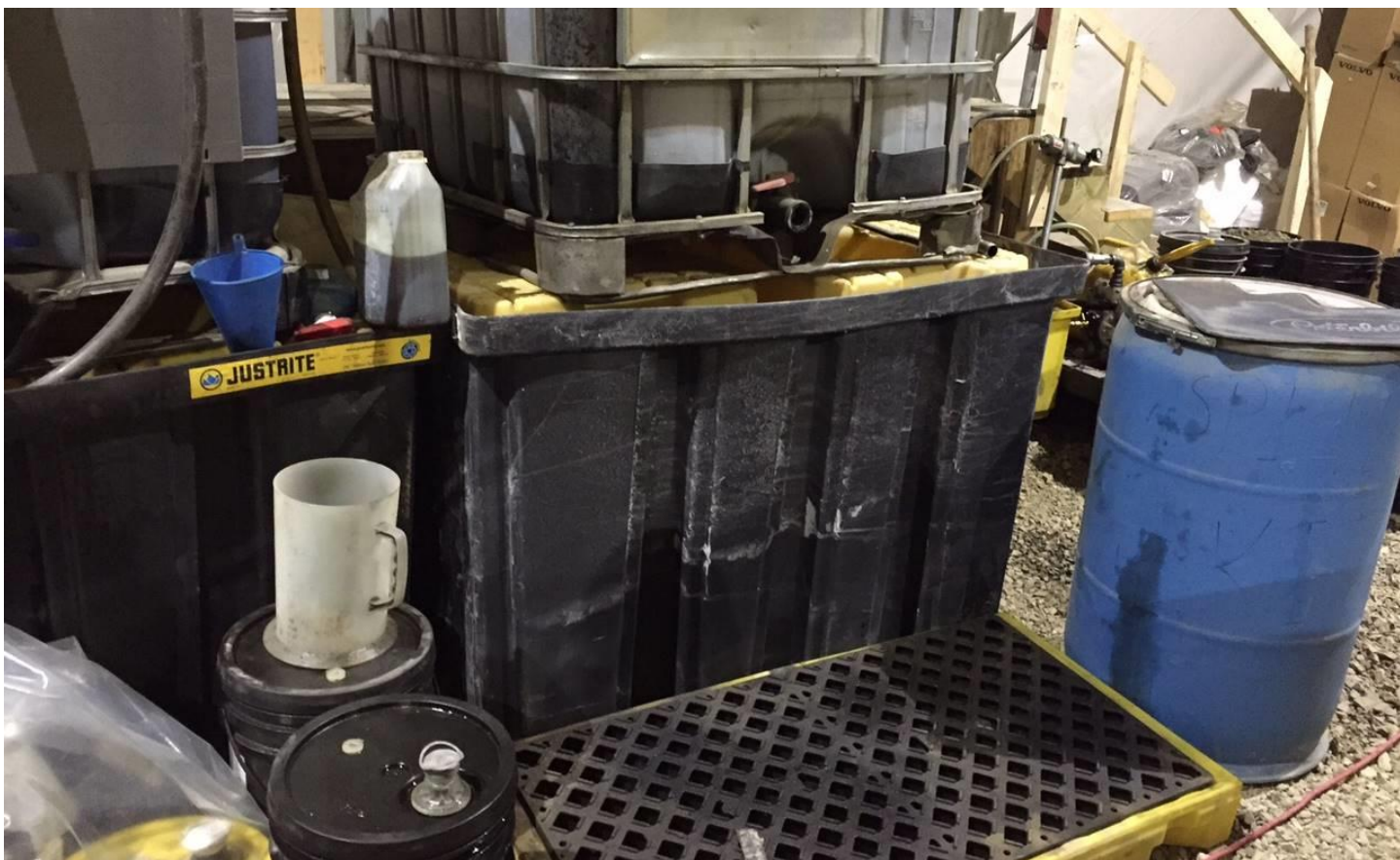


**Figure 8:** Jan 1 – Drivers using the spill trays provided to catch fuel drips.



**Figure 9:** Dec 26 – TNDC's shop. Full oil buckets are placed into secondary containment (the yellow bins) while empty buckets and other containers are placed on top of the shorter secondary containment.





**Figure 10:** Dec 28 – Also at TNDC's shop. A waste oil cube is now on 110% secondary containment.



**Figure 11:** Jan 1 – Secondary containment for stored antifreeze has been built. A cube of antifreeze is also sitting out in an area with high traffic and no secondary containment. The pit shop has been asked to move it.



**Figure 12:** Dec 31 – Buckets sometimes are stored improperly at the waste area.



**Figure 13:** Dec 31 – The contaminated waste seacan after a little housekeeping.





**Figure 14:** Dec 30 – Zoom boom hydraulic oil spill in the TIA.



**Figure 15:** Jan 3 – Spill from the haul truck that leaked approximately 500 L of diesel.





**Figure 16:** Jan 3 – After cleanup. Note: There was a blast between when the cleanup occurred and the phot was taken.



**Figure 17:** Dec 23 – The trailer that had a oil cube puncture has been cleaned up very well.





**Figure 18:** Dec 22 – The cow and calf moose grazing near the back parking lot.



**Figure 19:** Jan 1 – A fox was sleeping near the fuel tanks in the TIA.